

## Claims

What is claimed is:

- 1 A method for inter-cluster communication that employs register permutation, wherein the clustered functional units have some global registers, and the said clusters exchange data by permuting the said global registers of each cluster.
- 2 The method for inter-cluster communication that employs register permutation according to claim 1, wherein the register permutation is done by dynamically changing the port mapping between the global registers and the functional units.
- 3 The method for inter-cluster communication that employs register permutation according to claim 2, wherein the said port mapping is done by a crossbar router or by other routing structures.
- 4 The method for inter-cluster communication that employs register permutation according to claim 1, wherein neither the size of the said partitioned register files nor the number of the said ports is limited.
- 5 The method for inter-cluster communication that employs register permutation according to claim 1, further comprising any number of cluster structures.